

IONOSPHERIC PARAMETERS²³

The following tables give average nighttime values. Where two numbers are entered, the first refers to the lower and the second to the upper portion of the layer.

Quantity	E Region	F Region
Altitude (km)	90–160	160–500
Number density (m^{-3})	1.5×10^{10} – 3.0×10^{10}	5×10^{10} – 2×10^{11}
Height-integrated number density (m^{-2})	9×10^{14}	4.5×10^{15}
Ion-neutral collision frequency (sec^{-1})	2×10^3 – 10^2	0.5–0.05
Ion gyro-/collision frequency ratio κ_i	0.09–2.0	4.6×10^2 – 5.0×10^3
Ion Pederson factor $\kappa_i/(1 + \kappa_i^2)$	0.09–0.5	2.2×10^{-3} – 2×10^{-4}
Ion Hall factor $\kappa_i^2/(1 + \kappa_i^2)$	8×10^{-4} –0.8	1.0
Electron-neutral collision frequency	1.5×10^4 – 9.0×10^2	80–10
Electron gyro-/collision frequency ratio κ_e	4.1×10^2 – 6.9×10^3	7.8×10^4 – 6.2×10^5
Electron Pedersen factor $\kappa_e/(1 + \kappa_e^2)$	2.7×10^{-3} – 1.5×10^{-4}	10^{-5} – 1.5×10^{-6}
Electron Hall factor $\kappa_e^2/(1 + \kappa_e^2)$	1.0	1.0
Mean molecular weight	28–26	22–16
Ion gyrofrequency (sec^{-1})	180–190	230–300
Neutral diffusion coefficient ($\text{m}^2 \text{sec}^{-1}$)	30– 5×10^3	10^5

The terrestrial magnetic field in the lower ionosphere at equatorial latitudes is approximately $B_0 = 0.35 \times 10^{-4}$ tesla. The earth's radius is $R_E = 6371$ km.